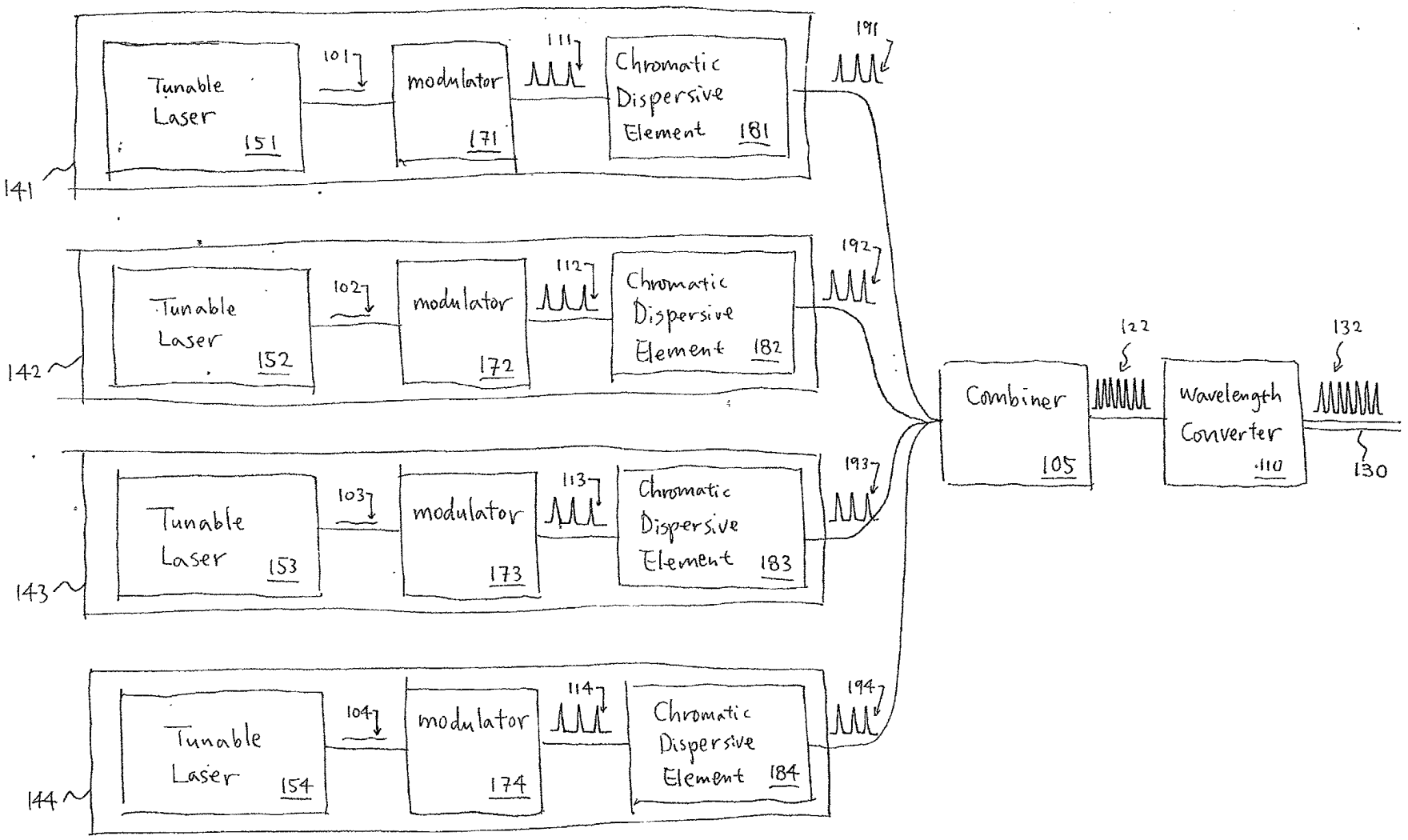
Tunable Laser 151
101
modulator 171
111
Chromatic Dispersive Element 181
191
141
Tunable Laser 152
102
modulator 172
112
Chromatic Dispersive Element 182
192
142
Tunable Laser 153
103
modulator 173
113
Chromatic Dispersive Element 183
193
143
Tunable Laser 154
104
modulator 174
114
Chromatic Dispersive Element 184
194
144
Combiner 105
122
Wavelength Converter 110
132
130

100

Figure 1

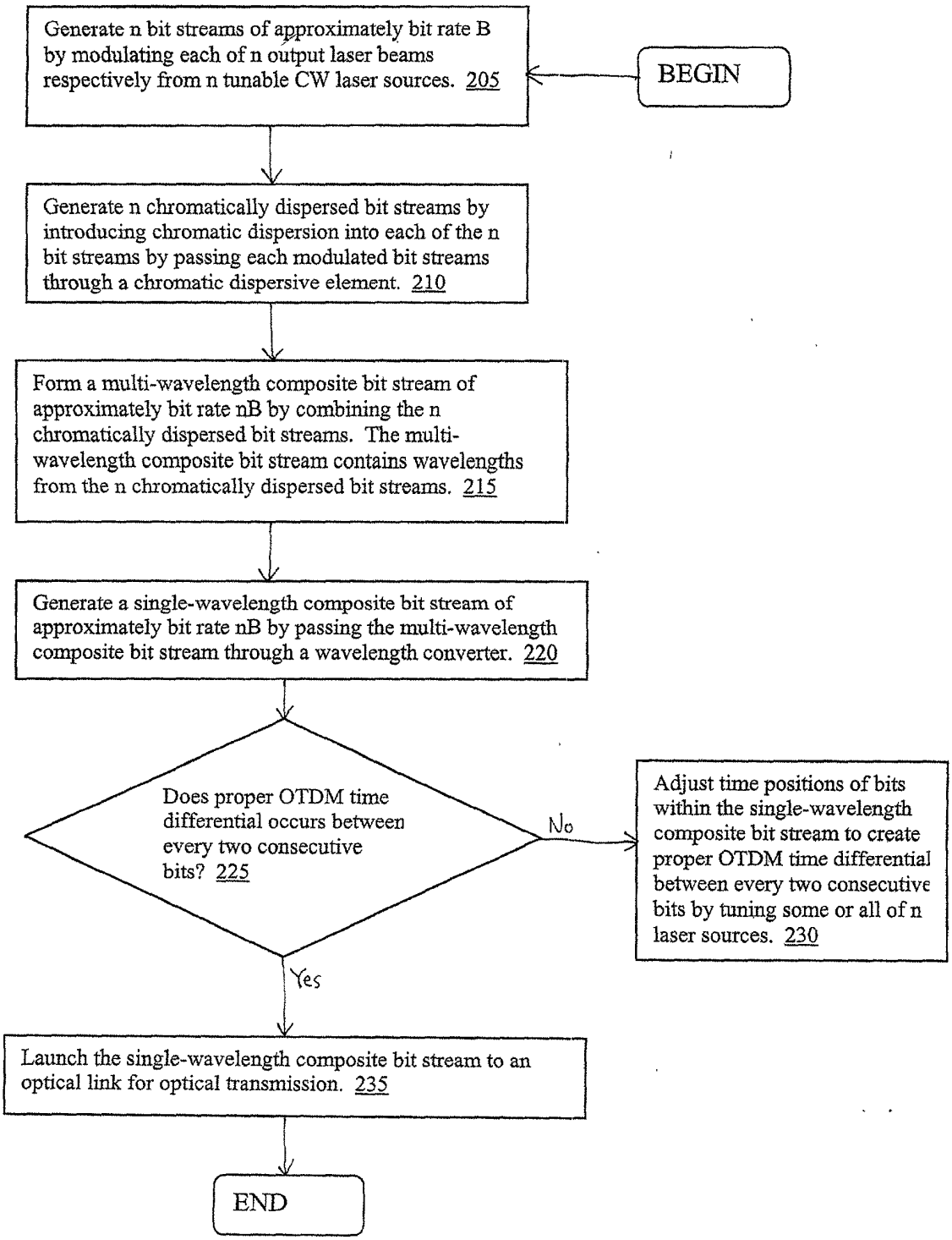
BEGIN
Generate n bit streams of approximately bit rate B by modulating each of n output laser beams respectively from n tunable CW laser sources. 205
Generate n chromatically dispersed bit streams by introducing chromatic dispersion into each of the n bit streams by passing each modulated bit streams through a chromatic dispersive element. 210
Form a multi-wavelength composite bit stream of approximately bit rate nB by combining the n chromatically dispersed bit streams. The multi-wavelength composite bit stream contains wavelengths from the n chromatically dispersed bit streams. 215
Generate a single-wavelength composite bit stream of approximately bit rate nB by passing the multi-wavelength composite bit stream through a wavelength converter. 220
Does proper OTDM time differential occurs between every two consecutive bits? 225
No
Adjust time positions of bits within the single-wavelength composite bit stream to create proper OTDM time differential between every two consecutive bits by tuning some or all of n laser sources. 230
Yes
Launch the single-wavelength composite bit stream to an optical link for optical transmission. 235
END

Figure 2

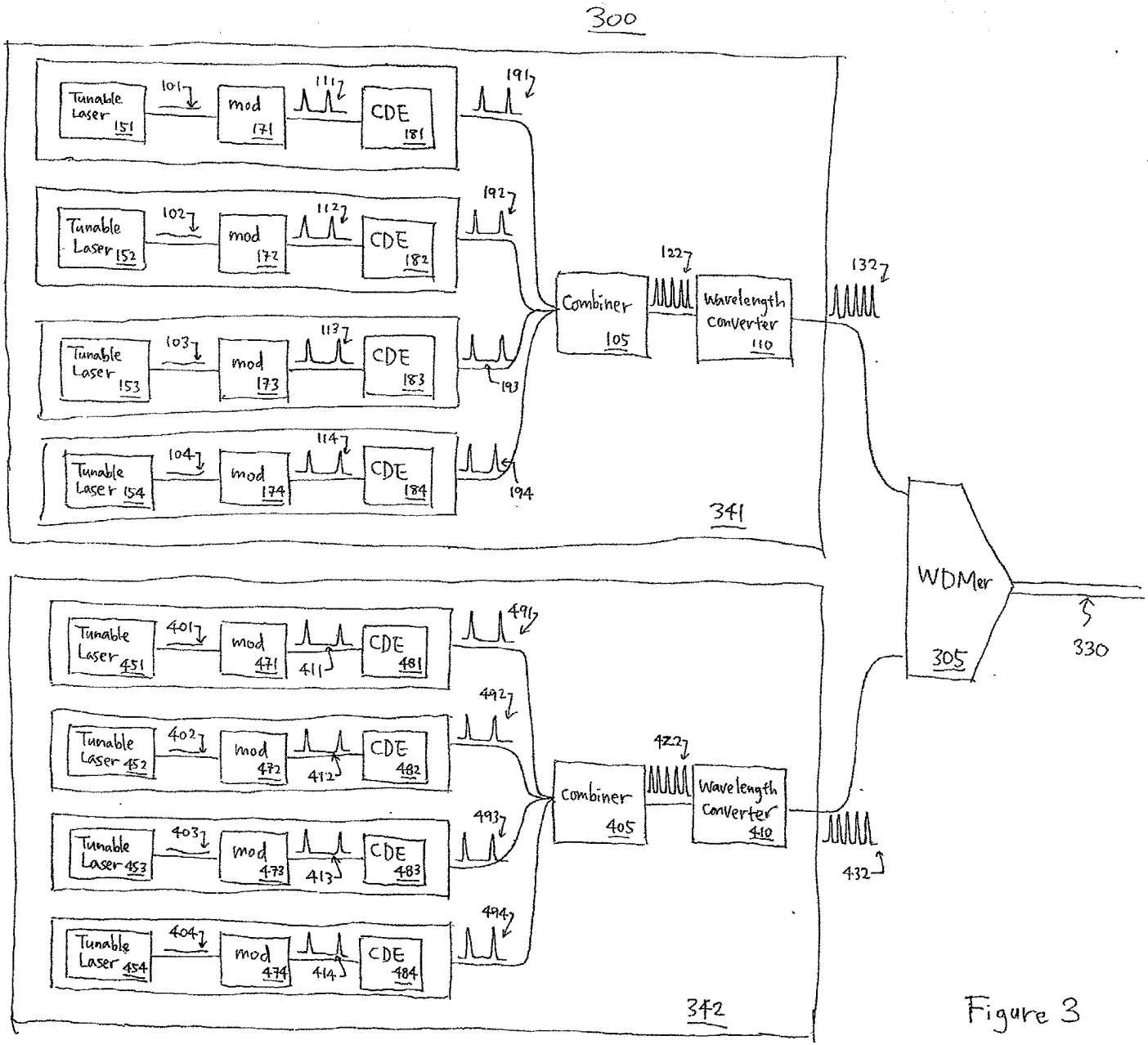
300
Tunable Laser 151
101
mod 171
111
CDE 181
191
Tunable Laser 152
102
mod 172
112
CDE 182
192
Tunable Laser 153
103
mod 173
113
CDE 183
193
Tunable Laser 154
104
mod 174
114
CDE 184
194
341
Combiner 105
122
Wavelength converter 110
132
WDMer 305
330
Tunable Laser 451
401
mod 471
411
CDE 481
491
Tunable Laser 452
402
mod 472
412
CDE 482
492
Tunable Laser 453
403
mod 473
413
CDE 483
493
Tunable Laser 454
404
mod 474
414
CDE 484
494
342
Combiner 405
422
Wavelength converter 410
432

Figure 3